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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,021	08/02/2001	Shane Chen	BWD:7945.005	8654

7590 11/22/2004

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EXAMINER
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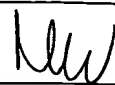
PARSLEY, DAVID J

ART UNIT	PAPER NUMBER
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3643

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/922,021	Applicant(s) CHEN, SHANE	
	Examiner David J Parsley	Art Unit 3643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 8-28 and 32-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-28 and 32-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| <p>1) <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/>Paper No(s)/Mail Date _____</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)<br/>Paper No(s)/Mail Date. _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____</p> |
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## **Detailed Action**

### ***Amendment***

1. This office action is in response to applicant's amendment dated 9-9-04 and this action is final.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8-28 and 32-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The term "off-gas" as seen in line 13 of claim 8, line 10 of claim 15 and line 8 of claim 23 is not used or defined in the specification and therefore constitutes a failure to comply with the written description requirement. Further, given the multiple embodiments disclosed in applicant's disclosure, it is unclear to what embodiment(s) the term "off-gas" is referring to.

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3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "predictable" in line 15 is indefinite. It is unclear to what a "predictable level of carbon dioxide" quantifies or what the level of carbon dioxide has to be in the produced gas to be at a predictable level.

Claims 9-14 depend from rejected claim 8 and include all of the limitations of claim 8, thereby rendering these dependent claims indefinite.

Claims 16-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Parent claim 15 recites the limitations of producing the carbon dioxide by either stirring the aqueous solution or by flowing a gas through the aqueous solution. Claim 16 further limits claim 15 in that only the stirring step is used to produce carbon dioxide. Claim 17 further limits claim 15 in that only the flowing of a gas through the aqueous solution is used to produce carbon dioxide. Therefore it is unclear to what step is to be used to produce the carbon dioxide in claims 16-17 since these claims contain limitations stating that either one of the stirring or flowing of gas can be used/is included (claim 15) but then state that only the stirring (claim 16) or flowing of gas (claim 17) is used excluding the other.

*Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8-9, 11-12, 15, 18-19, 21-25, 27, 32 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,151,374 to Delente et al. or U.S. Patent No. 5,956,896 to Miekka et al.

Referring to claims 8 and 15, Delente et al. and Miekka et al. disclose a method for providing carbon dioxide gas to a plant comprising, forming a chamber – at the interior of 11 of Delente et al. and – at 2 of Miekka et al., and enclosing at least a portion of the plant with the chamber – see for example column 3 lines 10-44 of Delente et al. and – see for example figures 1 and 5 of Miekka et al., providing a gas source – at 22 of Delente et al. and – proximate 8,12 or proximate 22 or 76 of Miekka et al., substantially free of carbon dioxide – see for example figure 1 of Delente et al. and column 3 lines 35-46 of Miekka et al., providing a carbon dioxide generator – at 11, 13, 19, 21, 28, 29 of Delente et al. and – at figures 3 and 6 of Miekka et al., in fluid communication with the chamber and the gas source – see figure 1 of Delente et al. and figures 1 and 5 of Miekka et al., the generator comprising a vessel – at 11 of Delente et al., and – at 19, 38, 44 or 80 of Miekka et al., containing an aqueous solution of at least one of hydrogen carbonate ions and carbonate ions – see for example column 4 lines 35-60 of Delente et al. and –

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at columns 3-4 of Miekka et al., producing carbon dioxide from the aqueous carbonate solution by processing the solution in a way that causes carbon dioxide in the solution to off-gas from the solution – see for example columns 3-5 of Delente et al. and figures 3 and 6 of Miekka et al., and mixing the carbon dioxide with the first gas to produce a gas mixture having a level of carbon dioxide and flowing the gas mixture into the chamber, by flowing a gaseous phase substance through the aqueous solution – see for example figure 1 of Delente et al. and figures 1-6 of Miekka et al.

Referring to claims 9, Delente et al. and Miekka et al. disclose the step of agitating the solution to produce the carbon dioxide – see proximate 13 of Delente et al., and figures 3 and 5 of Miekka et al.

Referring to claims 11 and 18, Delente et al. and Miekka et al. disclose producing carbon dioxide from the aqueous solution without the addition of acid – see for example figures 1-2 of Delente et al. and figures 5-6 of Miekka et al.

Referring to claims 12 and 24-25, Delente et al. and Miekka et al. further disclose producing carbon dioxide from the aqueous solution by flowing a gaseous phase material through the aqueous solution – see at 13 in figures 1-2 of Delente et al. and the bubbles in 42,44 of figure 3 of Miekka et al.

Referring to claims 19, 32 and 34, Delente et al. and Miekka et al. disclose the step of channeling a gaseous substance containing carbon dioxide from the aqueous carbonate solution to a defined output – see for example – at 13,21,29 of Delente et al. and – at 42 in figure 3 and – at 80-84 in figure 6 of Miekka et al.

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Referring to claims 21 and 27, Delente et al. and Miekka et al. disclose the step of flowing the aqueous solution through the vessel – see for example proximate 11-14 in figure 1 of Delente et al. and figures 3 and 6 of Miekka et al.

Referring to claim 22, Delente et al. Miekka et al. discloses the enclosure – at 11 of Delente et al. and – at 2 or 6 of Miekka et al., is a greenhouse – see for example figure 1 of Delente et al. and figures 1 and 5 of Miekka et al.

Referring to claim 23, Delente et al. and Miekka et al. disclose a method for providing carbon dioxide to an environment comprising, placing a carbon dioxide generator – at 11, 13, 19, 21, 28, 29 of Delente et al. and – at figures 3 and 6 of Miekka et al., in the environment, the generator comprising a vessel – at 11 of Delente et al., and – at 19, 38, 44 or 80 of Miekka et al., containing an aqueous solution of at least one of hydrogen carbonate ions and carbonate ions – see for example column 4 lines 35-60 of Delente et al. and – at columns 3-4 of Miekka et al., processing the aqueous solution to produce carbon dioxide – proximate 13 of Delente et al. and see figures 3 and 6 of Miekka et al., by causing carbon dioxide in the solution to off-gas from the solution, wherein the carbon dioxide is produced substantially without addition of acid to the aqueous solution – see columns 3-4 of Delente et al. and figure 6 and column 4 lines 46-59 of Miekka et al., and producing carbon dioxide from the aqueous solution in a sufficient quantity so as to elevate the level of carbon dioxide in the environment – see for example figure 1 and columns 3-4 of Delente et al. and figure 6 and column 4 lines 46-59 of Miekka et al.

Claims 10, 13-14, 17, 20, 26 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Miekka et al.

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Referring to claims 10 and 17, Miekka et al. discloses the step of agitating the solution comprises flowing the first gas through the aqueous solution – see for example figures 3 and 5.

Referring to claims 13, 20 and 26, Miekka et al. discloses the step of adding a solid source of at least one of hydrogen carbonate ions and carbonate ions to the generator – see for example column 3 lines 15-67 and column 4 lines 1-12.

Referring to claims 14 and 33, Miekka et al. discloses the step of producing carbon dioxide from the aqueous solution including evacuating a gaseous phase substance above a top surface of the solution – at 42 as seen in figure 3, so as to facilitate diffusion of carbon dioxide from the solution into the evacuated space – see for example figure 3.

Claims 10, 16-17 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Delente et al.

Referring to claims 10 and 17, Delente et al. discloses the step of agitating the solution comprises flowing the first gas through the aqueous solution – see for example the formation of the oxygen via the photosynthesis reaction in columns 3-4.

Referring to claim 16, Delente et al. discloses the step of producing carbon dioxide from the aqueous solution includes the step of stirring the solution – at 14, to emit the carbon dioxide – see for example figures 1-2.

Referring to claim 28, Delente et al. discloses the environment is a plant-culturing environment – see for example columns 3-4.

***Claim Rejections - 35 USC § 103***



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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-14, 20, 26 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delente et al. as applied to claims 8, 9, 15 and 23 above, and further in view of Miekka et al.

Referring to claims 13, 20 and 26, Delente et al. does not disclose the step of adding a solid source of at least one of hydrogen carbonate ions and carbonate ions to the generator. Miekka et al. does disclose the step of adding a solid source of at least one of hydrogen carbonate ions and carbonate ions to the generator – see for example column 3 lines 15-67 and column 4 lines 1-12. Therefore it would have been obvious to one of ordinary skill in the art to take the method of Delente et al. and add the adding of acid to the solution of Miekka et al., so as to allow for the carbon dioxide gas to be quickly and efficiently created.

Referring to claims 14 and 33, Delente et al. does not disclose the step of producing carbon dioxide from the aqueous solution including evacuating a gaseous phase substance above a top surface of the solution. Miekka et al. does disclose the step of producing carbon dioxide from the aqueous solution including evacuating a gaseous phase substance above a top surface of the solution – at 42 as seen in figure 3, so as to facilitate diffusion of carbon dioxide from the solution into the evacuated space – see for example figure 3. Therefore it would have been obvious to one of ordinary skill in the art to take the method of Delente et al. and add the step of evacuating the gas above the aqueous solution to allow carbon dioxide to diffuse into the

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evacuated space of Miekka et al., so as to ensure that the carbon dioxide is moved quickly into the chamber containing the plant.

Claims 16 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miekka et al. as applied to claims 8, 15 or 23 above, and further in view of Delente et al.

Referring to claim 16, Miekka et al. does not disclose the step of producing carbon dioxide from the aqueous solution by stirring the solution. Delente et al. does disclose the step of producing carbon dioxide from the aqueous solution includes the step of stirring the solution – at 14; to emit the carbon dioxide – see for example figures 1-2. Therefore it would have been obvious to one of ordinary skill in the art to take the method of Miekka et al. and add the stirring of the solution of Delente et al., so as to allow for the carbon dioxide to be quickly formed and dispersed.

Referring to claim 28, Miekka et al. does not disclose the environment is a plant-culturing environment. Delente et al. does disclose the environment is a plant-culturing environment – see for example columns 3-4. Therefore it would have been obvious to one of ordinary skill in the art to take the method of Miekka et al. and add the environment being a plant-culturing environment of Delente et al., so as to allow for the increased growth of the cultured plant.

### ***Response to Arguments***

6. Regarding claims 8 and 23, the Delente et al. reference US 5151347 does disclose producing carbon dioxide via items – 13,21,29 and the piping connecting these items, with the carbon dioxide being produced into the aqueous solution – at 14, via item – 13 as seen in figure

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1, and the carbon dioxide being off-gassed and mixed with another gas such as the hydrogen – at 22 or the oxygen in the tank – see column 3 lines 60-68 and column 4 lines 1-13.

Regarding claim 8, the Miekka et al. reference US 5956896 does disclose releasing carbon dioxide in the aqueous solution – at 42 and 82, as seen via the carbon dioxide bubbling through the solution – at 20 and – at 42 as seen in figure 3 and by bubbling the carbon dioxide through the water solution – at 82. Miekka et al. further discloses mixing the carbon dioxide with a gas substantially free of carbon dioxide as seen in figures 3 and 6 where the produced carbon dioxide mixes with the air, which is substantially free of carbon dioxide located above the aqueous solution – proximate 20, 42 or 82.

Regarding claim 15, the Delente et al. reference does disclose flowing a gas – at 21, through the aqueous solution – at 14 via item – 13 as seen in figure 1.

Regarding claim 15, the Miekka et al. reference does disclose flowing a gas – at 20 or the bubbles in item – 42 as seen in figure 3 or the bubbles in the carbonated water – at 82 in figure 6, through the aqueous solution – at the inside of 38, at 42 or at 82.

Regarding claim 23, the Miekka et al. reference does disclose forming carbon dioxide without the aid of acid as seen in the embodiment shown in figures 5-6 – see column 4 lines 27-59.

Regarding applicant's arguments with respect to the dependent claims, the Delente et al. and Miekka et al. references both disclose agitating the aqueous solution – as seen in the arrows indicating the liquid flow in figure 1 of Delente et al. and by the bubbling action in figures 3 and 6 of Miekka et al. Further, the Miekka et al. reference discloses evacuating the air space above the solution – at 42 as seen by the gas flow arrows – at 20, to allow carbon dioxide to enter the

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evacuated space. Further, both the Delente et al. and Miekka et al. references both disclose flowing the carbon dioxide through a vessel as seen – at 13 in Delente et al. and via the bubbling action in figures 3 and 6 of Miekka et al.

### *Conclusion*

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J Parsley whose telephone number is (703) 306-0552. The examiner can normally be reached on 9hr compressed.

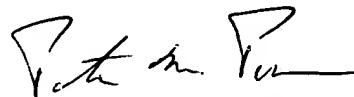
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon can be reached on (703) 308-2574. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David Parsley  
Patent Examiner  
Art Unit 3643



**PETER M. POON**  
**SUPERVISORY PATENT EXAMINER**

11/17/07